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EXAMINER

REID, CHERYL M

ART UNIT PAPER NUMBER

2142

DATE MAILED: 11/30/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

09/976,339

Applicant(s)

CHOI ET AL.

Examiner

Cheryl M. Reid

Art Unit

2142

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-24 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-24 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_.

## DETAILED ACTION

### *Specification*

1. Claims 1-24 have been examined.

### ***Claim Rejections - 35 USC § 103***

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 1-6, are rejected under 35 U.S.C. 103(a) as being unpatentable over Zimmerman and further in view of Walton.

### **Claim 1**

- Zimmerman teaches of determining whether a new channel to be used.....(Paragraph [0024], lines 2-3); measuring a channel quality of a plurality (Paragraph [0023], lines 8-10); selecting one of said candidate channels based on...(Paragraph [0024], lines 3-5). Although Zimmerman teaches about measuring signal strength indication (Paragraph [0023], lines 8-10), he is silent

in regards to measuring Clear Channel Assessment (CCA) or busy periods.

Walton teaches on this aspect (Paragraph [0078], lines 3-4). Zimmerman's invention relates to mobile communication devices such as cordless telephones (Paragraph [0003], lines 1-4). Walton's invention relates to mobile telephone systems (Paragraph [0003], lines 1-2). Adding the above-mentioned feature to Zimmerman's invention would allow him to select a more reliable channel. It is for this reason that one of ordinary skill in the art at the time of invention would have been motivated to make the above modification.

### **Claim 2**

- Zimmerman teaches of channel signal quality further includes an interference signal level....( Paragraph [0005], lines 1-4). Zimmerman is silent in regards to interference signal level is based on a periodic presence ...Walton teaches on this aspect (Paragraph [0078]. One of ordinary skill in the art at the time of invention would have been motivated to make the above modification for the same reasons discussed in claim 1.

### **Claim 3**

- Zimmerman teaches that selecting one of said candidate channels is based on the least interference.....( Paragraph [0028], lines 5-7).

**Claim 4**

- Zimmerman teaches that selecting one of said candidate channels meeting other regulatory requirements (pre-specified criterion) (Paragraph [0028], lines 5-7).

**Claim 5**

- Zimmerman teaches of transmitting the selected channel information.....( Paragraph [0007], lines 15-16).

**Claim 6**

- Zimmerman teaches of the step of switching.....( Paragraph [0011], lines 5-7).

4. Claims 7-10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Zimmerman and further in view of Lundell.

**Claim 7**

- Zimmerman teaches of determining whether a new channel is to be used.....(Paragraph [0024], lines 2-3); transmitting a channel quality report of a plurality..... (Paragraph [0007], lines 15-16); selecting one of said candidate channels is based on the least interference.....( Paragraph [0028], lines 5-7).  
Zimmerman is silent in regards to determining whether a signal from an adjacent

BSS is received by said plurality of STAs. Lundell teaches on this aspect (Col 3, lines 19-21). Zimmerman is also silent in regards to requesting measurement for a channel quality. Lundell also teaches on this aspect (Col 17, lines 53-55).

Zimmerman's invention relates to mobile communication devices such as cordless telephones (Paragraph [0003], lines 1-4). Adding the above-mentioned features to Zimmerman's invention would allow him to select a more reliable channel. It is for this reason that one of ordinary skill in the art at the time of invention would have been motivated to make the above modification.

#### **Claim 8**

- Zimmerman teaches about communication ..... (Paragraph [0007], lines 15-16).

#### **Claim 9**

- Zimmerman teaches about switching to new channel ..... ( Paragraph [0011], lines 5-7).

#### **Claim 10**

- Zimmerman implicitly teaches that new channel is selected if said RSSI (interference) does not exceed a predetermined threshold (Paragraph [0028], lines 5-8), (Paragraph [0026], lines 9-1216).

5. Claim 11 and 12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Zimmermann and Lundell as applied to claim 7 above, and further in view of Walton.

**Claim 11**

- Zimmerman teaches of channel signal quality further includes an interference signal level....( Paragraph [0005], lines 1-4). Zimmerman is silent in regards to interference signal level is based on a periodic presence ...Walton teaches on this aspect (Paragraph [0078]. One of ordinary skill in the art at the time of invention would have been motivated to make the above modification for the same reasons discussed in claim 1.
- Zimmerman teaches about selecting a channel with the least interference (Paragraph [0028], lines 5-8). He is silent in regards to selecting said new channel based on whether the channel causes the least interference to another communication device. He does teach that the selection of a new channel is based on pre-specified criterion (Paragraph [0028], lines 5-8). One of ordinary skill in the art would be motivated to extend the pre-specified criterion to include a criteria that resulted in choosing a channel that caused the least interference to another communication device because adding the above mention feature would allow Zimmerman's invention to provide service with a minimum amount of interference to other devices using the system besides the device that changed or moved to a new channel, thus resulting in a more accurate and efficient

system. It is for this reason that one of ordinary skill in the art at the time of invention would have been motivated to make the above modification.

**Claim 12**

- Zimmerman teaches of determining that new channel is need when the transmission quality becomes insufficient (said AP or said STA experiences a bad channel condition) (Paragraph [0006]).

6. Claims 13-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Zimmerman, and further in view of Lundell and further in view of Walton.

**Claim 13**

- Zimmerman teaches of determining whether a new channel is to be used.....(Paragraph [0024], lines 2-3); Zimmerman is silent in regards to determining whether a signal from an adjacent BSS is received by said plurality of STAs. Lundell teaches on this aspect (Col 3, lines 19-21). Zimmerman teaches about measuring signal strength but is silent in regards to measuring busy periods of channels. Walton teaches on this aspect (Paragraph [0078], lines 1-3). Zimmerman, Lundell, and Walton inventions all relate to improving mobile communications. Adding the above mention features would allow Zimmerman to both determine if a device can communicate with adjacent channel and if an adjacent channel is available. It is for these reasons that one of ordinary skill in



the art at the time of invention would have been motivated to make the above mention modifications to Zimmerman.

- Zimmerman teaches about selecting a channel with the least interference (Paragraph [0028], lines 5-8). He is silent in regards to selecting said new channel based on whether the channel causes the least interference to another communication device. He does teach that the selection of a new channel is based on pre-specified criterion. One of ordinary skill in the art would be motivated to extend the pre-specified criterion to include a criteria that resulted in choosing a channel that caused the least interference to another communication device for the same reason discussed in claim 11.
- Zimmerman teaches of selecting channel based on the least interference...(Paragraph [0028], lines 5-7). While Zimmerman did not explicitly state that a channel's CCA( i.e. having a busy signal) is used as a deciding criteria for selecting a new channel, he stated that switching to a channel pair can be based on pre-specified criterion (Paragraph [0028], lines 5-7). Adding the above mention features of (selecting said new channel based on whether the channel causes the least interference to another communication device and selecting a channel based on CCA signal (busy signal) would allow Zimmerman's invention to provide service with a minimum amount of interference to other devices using the system besides the device that changed or moved to a new channel and provide users with a more reliable system, thus resulting in a more accurate and efficient system.

**Claim 14**

- Zimmerman teaches of transmitting the selected channel information.....( Paragraph [0007], lines 15-16).

**Claim 15**

- Zimmerman teaches about switching to new channel .....( Paragraph [0011], lines 5-7).

**Claim 16**

- Zimmerman teaches of determining that new channel is need when the transmission quality becomes insufficient (said AP or said STA experiences a bad channel condition) (Paragraph [0006]).

**Claim 17**

- Zimmerman teaches of determining whether a new channel is to be used.....(Paragraph [0024], lines 2-3);
- Zimmerman teaches that selecting one of said candidate channels is based on the least interference.....( Paragraph [0028], lines 5-7).
- Zimmerman is silent in regards to requesting, by said AP, a channel signal.....  
Lundell teaches on this aspect (Col 17, lines 53-55).

- Although Zimmerman teaches about transmitting a quality report that includes signal strengths. He did not teach about the quality report including information about CCA (busy signals). One of ordinary skill at the time of invention would be motivated to make the above-mentioned modifications for the same reasons discussed in claim 11.
- Zimmerman is silent in regards to determining whether a signal from an adjacent BSS is received by said plurality of STAs. Lundell teaches on this aspect (Col 3, lines 19-21). One of ordinary skill at the time of invention would be motivated to make the above-mentioned modifications for the same reasons discussed in claim 7.

**Claim 18**

- Zimmerman teaches about communication ..... (Paragraph [0007], lines 15-16).

**Claim 19**

- Zimmerman teaches about switching to new channel .....( Paragraph [0011], lines 5-7).

**Claim 20**

- Zimmerman implicitly teaches that new channel is selected if said RSSI (interference) does not exceed a predetermined threshold (Paragraph [0028], lines 5-8), (Paragraph [0026], lines 9-1216).

7. Claim 21-24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Zimmerman, and further in view of Lundell and further in view of Walton, as applied to claim 17 above and further in view of Kobylinski.

**Claim 21**

- Zimmerman teaches about selecting a channel with the least interference (Paragraph [0028], lines 5-8). He is silent in regards to selecting said new channel based on whether the channel causes the least interference to another communication device. He does teach that the selection of a new channel is based on pre-specified criterion. One of ordinary skill in the art would be motivated to extend the pre-specified criterion to include a criteria that resulted in choosing a channel that caused the least interference to another communication device for the same reason discussed in claim 11.

- Zimmerman is silent in regards to determining whether an interference signal level caused by another communication device is detected based on a periodic absence of any 802.11 frame.....Kobylinski teaches on this aspect (Col 4, lines 1-7). Zimmerman's invention relates to mobile communication devices such as cordless telephones (Paragraph [0003], lines 1-4). Kobylinski invention relates to improving mobile system handoff (Col 1, lines 14-15). Adding the above mention feature to Zimmerman's invention would give him a more systematic method for measuring interference (i.e. measuring interference at a specific time). This would result in a more reliable system. It is for this reason that one of ordinary skill at the time of invention would be motivated to add the above-mentioned feature to Zimmerman's invention.

## **Claim 22**

- Zimmerman teaches of a memory storing.....(Page 8, 2n Col, lines 3-4); a processor operatively .....(Page 7, 1<sup>st</sup> col, lines 43-44)
- Zimmerman teaches of determining whether a new channel to be used.....(Paragraph [0024], lines 2-3);
- Zimmerman is silent in regards to determining whether a signal from an adjacent BSS is received by said plurality of STAs. Lundell teaches on this aspect (Col 3,

lines 19-21). One of ordinary skill in the art would be motivated to make the above-mentioned modifications for the same reasons discussed in claim 7.

- Although Zimmerman teaches about measuring signal strength indication (Paragraph [0023], lines 8-10), he is silent in regards to measuring Clear Channel Assessment (CCA) or busy periods. Walton teaches on this aspect (Paragraph [0078], lines 3-4). One of ordinary skill in the art would be motivated to make the above-mentioned modifications for the same reasons discussed in claim 1.
- Zimmerman is silent in regards to determining whether an interference signal level caused by another communication device is detected based on a periodic absence of any 802.11 frame.....Kobylinski teaches on this aspect (Col 4, lines 1-7). Zimmerman's invention relates to mobile communication devices such as cordless telephones (Paragraph [0003], lines 1-4). Kobylinski invention relates to improving mobile system handoff (Col 1, lines 14-15). Adding the above mention feature to Zimmerman's invention would give him a more systematic method for measuring interference (i.e. measuring interference at a specific time). This would result in a more reliable system. It is for this reason that one of ordinary skill at the time of invention would be motivated to add the above-mentioned feature to Zimmerman's invention.
- Zimmerman teaches about selecting a channel with the least interference (Paragraph [0028], lines 5-8). He is silent in regards to selecting said new channel based on whether the channel causes the least interference to another

communication device. He does teach that the selection of a new channel is based on pre-specified criterion. Zimmerman teaches of selecting channel based on the least interference...(Paragraph [0028], lines 5-7). While Zimmerman did not explicitly state that a channel's CCA( i.e. having a busy signal) is used as a deciding criteria for selecting a new channel, He does teach that the selection of a new channel is based on pre-specified criterion(Paragraph [0028], lines 5-7). Adding the above mention features of (selecting said new channel based on whether the channel causes the least interference to another communication device and selecting a channel based on CCA signal (busy signal) would allow Zimmerman's invention to provide service with a minimum amount of interference to other devices using the system besides the device that changed or moved to a new channel and provide users with a more reliable system, thus resulting in a more accurate and efficient system.

**Claim 23**

- Zimmerman teaches about communication ..... (Paragraph [0007], lines 15-16).


**Claim 24**

- Zimmerman teaches about switching to new channel .....( Paragraph [0011], lines 5-7).

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Cheryl M. Reid whose telephone number is 571 272 3903. The examiner can normally be reached on Mon- Fri (7-3:30).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jack Harvey can be reached on (571)272-3896. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

  
JACK B. HARVEY  
SUPERVISORY PATENT EXAMINER



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